Required Procedures for Respiratory Protection Program

WAC 296-842-220

Rule

Table 15 ***Irritant Smoke (Stannic Chloride) Test Procedure***
Important: ***Do not use a test enclosure or hood for this fit test!*** • This is a qualitative fit-test (QLFT) procedure. • During this test an employee is exposed to irritating smoke containing hydrochloric acid produced by a stannic chloride ventilation smoke tube to detect leakage. The smoke will irritate eyes, lungs, and nasal passages. • Employee sensitivity varies, and certain employees may respond more intensely than others exposed to irritant smoke. The individual conducting the fit test must take precautions to minimize the employees' exposure to irritant smoke. • Conduct fit testing in an area with adequate ventilation to prevent exposure of the individual conducting the fit test and build-up of irritant smoke in the ambient air.
Screening and Test Preparations
Important: Sensitivity screening is necessary to determine whether the employee can detect a weak concentration of irritant smoke ***and*** whether any gross facepiece leakage is detected. ***1.*** Obtain only stannic chloride (ventilation) smoke tubes, ***and*** an aspirator squeeze bulb ***or*** use a low flow air pump set to deliver 200 milliliters of air flow per minute. ***2***. Equip the employee's chosen respirator with P100 series filters if a negative pressure air-purifying respirator will be tested. If a powered air-purifying respirator (PAPR) will be tested equip the respirator with high efficiency particulate air (HEPA) filters.
Screening
Important: When performing sensitivity screening checks use only the ***minimum*** amount of smoke necessary to elicit a response from the employee. ***3.*** Advise the employee that the smoke can be irritating to eyes, lungs, and nasal passages ***and*** instruct the employee to keep eyes closed while exposed. ***4.*** Break both ends of the ventilation smoke tube ***and*** fit a short piece of plastic tubing, for example, 2-to-6 inches of tygon tubing, over one end to prevent exposure to the sharp end of the tube. Connect the other end to an aspirator bulb or a low-flow air pump set to deliver a flow of 200 ml per minute. ***5.*** While the employee is ***not*** wearing a respirator, have the employee smell a weak concentration of irritant smoke to become familiar with its irritating properties. • Carefully direct a small amount of irritant smoke toward the employee.

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Table 15 (Continued) *Irritant Smoke (Stannic Chloride) Test Procedure*
Test
6. Have the employee attach respirator filters, put on, adjust, and seal check the respirator without assistance. The employee must be proficient at these tasks. ***7.*** Remind the employee to keep eyes closed during testing. ***8.*** Direct a stream of irritant smoke toward the respirator's face seal area as follows: • Begin at least 12 inches from the facepiece and move the smoke around the whole perimeter of the mask. • Gradually make 2 more passes around the perimeter of the facepiece, moving to within 6 inches of the respirator. • ***Stop*** at any time the employee detects smoke in the facepiece. If this occurs a different respirator will need to be chosen and tested, beginning with sensitivity screening. ***9.*** Have the employee perform appropriate fit test exercises in Table 19 if the employee has ***not*** had an involuntary response such as evidence of coughing, flinching, or other response, or detected smoke in the facepiece. • Continue to direct smoke from a distance of 6 inches around the facepiece perimeter. - If smoke is detected at any time the test has failed. A different respirator must be chosen and tested, staring with sensitivity screening. - If no smoke is detected proceed to Step 10. ***10.*** Have the employee remove the respirator and perform another sensitivity screening check as follows: • Continue to use the smoke tube used for fit testing. • Carefully direct a ***small*** amount of irritant smoke toward the employee. - The test has been passed if the employee responds to the smoke. The fit test is voided ***if*** the employee does ***not*** respond to the smoke.

Table 16
Ambient Aerosol Condensation Nuclei Counter (Portacount™)
Test Procedure

Important:

- This is a quantitative (QNFT) fit-test procedure.
- This method uses a particle counting instrument that measures and compares the particle concentration both inside and outside the respirator facepiece while the employee performs a series of test exercises.
- Particles in the ambient air are used as the test aerosol.

Test Preparations

1. Obtain a test instrument such as a Portacount™.

2. Have probed respirators available for each respirator model and size the employer uses, ***or*** have a sampling adapter available if the employee's actual or chosen respirator will be tested.

Note:

- A probed respirator has a special fitting installed on the facepiece designed to connect with the end of the test instrument's plastic sampling tube so that air samples can be taken inside the facepiece. Probed respirators can be obtained from the respirator manufacturer, or distributor, ***and*** can only be used for fit testing purposes.
- Contact TSI Inc., ***or*** the respirator's manufacturer to obtain probed respirators or facepiece sampling adapters.

3. Follow the test instrument manufacturer's instructions for test preparation, including particle, zero, and system checks. Make sure the instrument's pass ***or*** fail criterion is programmed to the following ***minimum*** performance levels:

- For half-facepiece respirators, an overall minimum fit factor of 100 as a passing level.
- For full-facepiece respirators, an overall minimum fit factor of 500 as a passing level.

4. Have high efficiency particulate air (HEPA) filters, ***or*** other respirator filters available that are capable of preventing significant penetration by particles generated by the test instrument such as, P100 or N95 series filters.

- If you will use a sampling adapter instead of probed respirators be sure to have the correct type for the respirators chosen.